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To: Golam M. Shameem, Examiner
Art Unit 1626
U. S. Patent and Trademark Office
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From: Joyce G. Cohen, Reg. No. 44,622
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Date: May 25, 2004
# of pages: 14 (*including this page*)

Re: Response to Restriction Requirement
U. S. Serial No.: 10/659,931
Examiner: Golam M. Shameem Group Art Unit: 1626
Title: SODIUM CHANNEL MODULATORS

Attached is the following:

1. **Transmittal Form (1 page)**
2. **Response to Restriction Requirement (12 pages)**

CERTIFICATE OF FACSIMILE TRANSMISSION

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By: Barbara Bryant **Date:** May 25 , 2004
Barbara Bryant

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TRANSMITTAL FORM

(to be used for all correspondence after initial filing)

Application Number	10/659,931
Filing Date	September 11, 2003
First Named Inventor	Seok-Ki CHOI
Art Unit	1626
Examiner Name	Golam M. SHAMEEM
Total Number of Pages in This Submission: 14	Attorney Docket Number: P-108-US2

ENCLOSURES *(check all that apply)*

- ☐ Fee Transmittal Form
  - ☐ Fee Attached
- ☒ Amendment / Reply
  - ☐ After Final
  - ☐ Affidavits/declaration(s)
- ☐ Extension of Time Request
- ☐ Express Abandonment Request
- ☐ Information Disclosure Statement
- ☐ Certified Copy of Priority Document(s)
- ☐ Response to Missing Parts/ Incomplete Application
  - ☐ Response to Missing Parts under 37 CFR 1.52 or 1.53
- ☐ Drawing(s)
- ☐ Licensing-related Papers
- ☐ Petition
- ☐ Petition to Convert to a Provisional Application
- ☐ Power of Attorney, Revocation Change of Correspondence Address
- ☐ Terminal Disclaimer
- ☐ Request for Refund
- ☐ CD, Number of CD(s) _____
- ☐ After Allowance Communication to Technology Center (TC)
- ☐ Appeal Communication to Board of Appeals and Interferences
- ☐ Appeal Communication to TC **(Appeal Notice, Brief, Reply Brief)**
- ☐ Proprietary Information
- ☐ Status Letter
- ☐ Other Enclosure(s) *(please identify below)*:

Remarks

Enclosed are the following:

1. **Response to Restriction Requirement (12 pages)**
2. **This Transmittal Form (1 page)**
3. **Facsimile Transmission Cover Page (1 page)**

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm or Individual name	Joyce G. Cohen, Reg. No. 44,622
Signature	Joyce Cohen
Date	May 25, 2004

CERTIFICATE OF FACSIMILE TRANSMISSION

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Typed or printed name	Barbara Bryant		
Signature	Barbara Bryant	Date	May 25, 2004

CERTIFICATE OF FACSIMILE TRANSMISSION

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By: Barbara Bryant
Barbara Bryant

Date: May 25, 2004

Patent
Attorney Docket: P-108-US2
Customer No. 27038

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of	
Seok-Ki CHOI et al.	Group Art Unit: 1626
Application No.: 10/659,931	Examiner: Golam M. Shameem
Filed: September 11, 2003	
For: SODIUM CHANNEL MODULATORS	

RESPONSE TO RESTRICTION REQUIREMENT

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

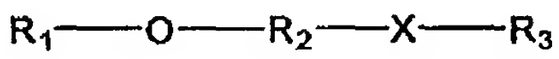
Sir:

Applicants respectfully submit the following amendments and remarks in response to the Office Action mailed on May 5, 2004, for which a one month response period was designated. This response is considered timely filed on or before June 5, 2004.

1. (previously amended) A compound of formula (I):

(I)

wherein:

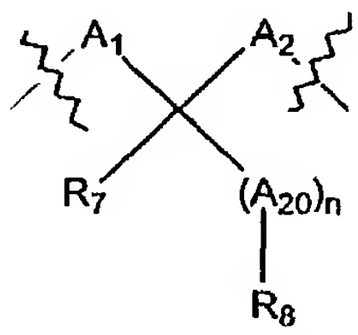


R_1 is aryl;

R_2 is a group of formula (II):

(II)

wherein



A_1, A_2, and A_{20} are each independently alkylene or substituted alkylene;

n is 0 or 1;

R_7 is hydrogen, alkyl, or substituted alkyl;

R_8 is $NR_{10}R_{11}$, wherein each of R_{10} and R_{11} is independently hydrogen, alkyl, or substituted alkyl; and

X is a direct bond and R_3 is an N-linked heteroaryl or an N-linked heterocycle;

wherein any aryl of R_1-R_3 can optionally be substituted with from 1 to 5 substituents R_g; wherein each R_g is independently selected from the group consisting of hydroxy, alkyl, substituted alkyl, alkoxy, cycloalkoxy, substituted cycloalkoxy, methanediol, ethanediol, cycloalkyl, substituted alkyl, substituted alkoxy, substituted cycloalkyl, amino, substituted amino, aryl, aryloxy, carboxy, carboxylalkyl, carboxyl(substituted alkyl), cyano, halo, nitro, heteroaryl, heteroaryloxy, heterocyclic, heterocyclooxy, heteroaryl and trihalomethyl;

and wherein any heteroaryl of R_2-R_3 can be optionally substituted with 1 to 5 substituents R_h, wherein each R_h is independently selected from the group consisting of hydroxy, alkyl, alkoxy, substituted alkoxy, cycloalkoxy, substituted cycloalkoxy, substituted alkyl, arylalkyl, heteroarylalkyl, heterocyclealkyl, substituted cycloalkyl, amino, substituted amino, aryl, aryloxy, carboxyl, carboxylalkyl, carboxyl(substituted alkyl), cyano, halo, nitro, heterocyclic, and trihalomethyl.

or a pharmaceutically acceptable salt thereof.

2. (original) The compound of claim 1 wherein R_1 is aryl optionally substituted with one or more halo or alkyl.

3. (original) The compound of claim 1 wherein R_1 is 2-methylphenyl, 2-chloro-6-methylphenyl, 2,4,6-trifluorophenyl, 2,6-dimethylphenyl, or 2,4-dimethylphenyl.

4. (original) The compound of claim 1 wherein A_1 is methylene or 1,1-ethanediyl, and A_2 is methylene.

5. (original) The compound of claim 1 wherein R_7 is hydrogen or methyl.

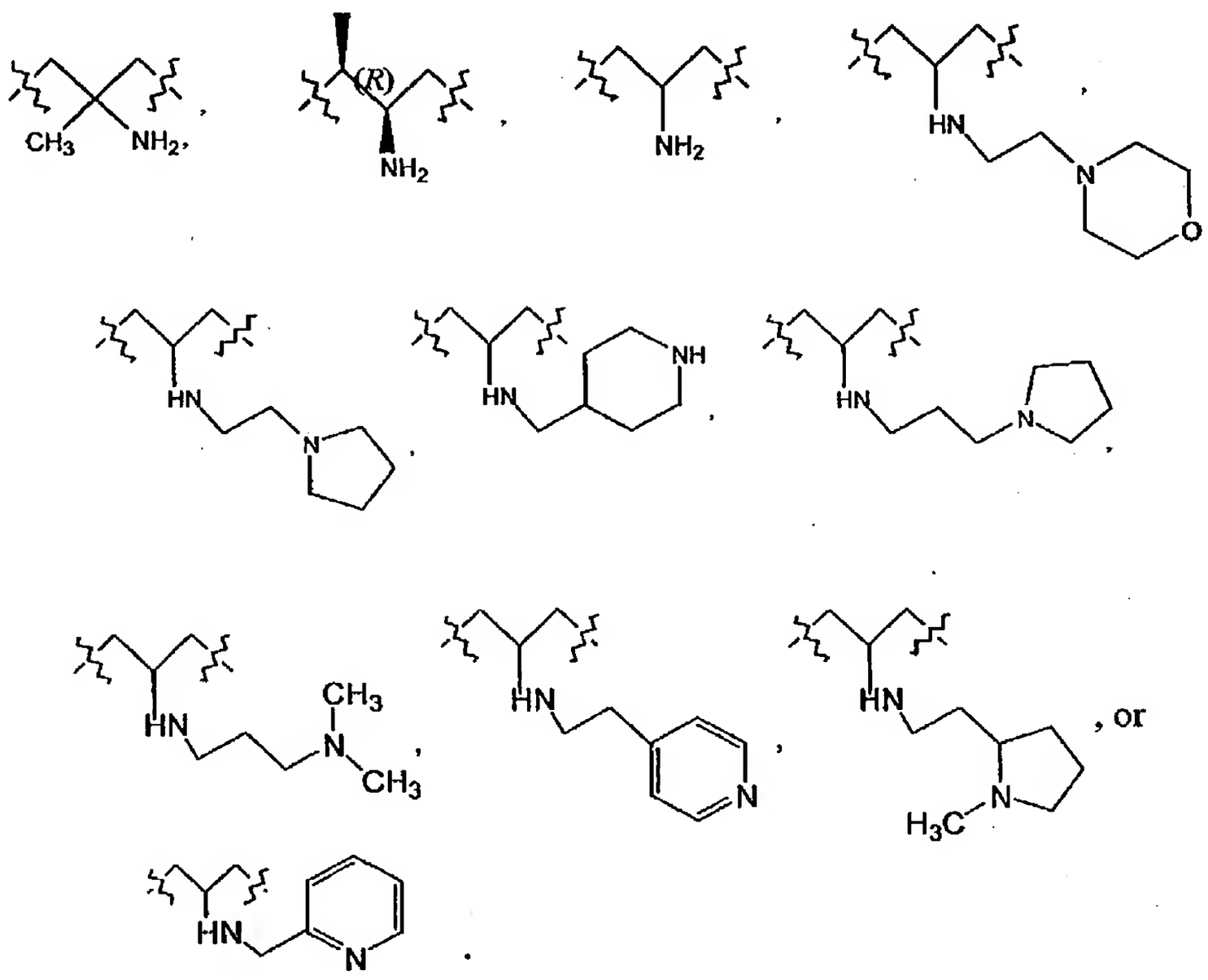
6. (original) The compound of claim 1 wherein R_8 is amino.

7. (original) The compound of claim 1 wherein n is 0.

8. (original) The compound of claim 1 wherein R_8 is $NR_{10}R_{11}$; and R_{11} is heterocyclealkyl, heteroarylalkyl, or alkyl.

9. (original) The compound of claim 1 wherein R_8 is $NR_{10}R_{11}$; R_{10} is hydrogen; and R_{11} is 2-morpholinoethyl, 2-(pyrrolidin-1-yl)ethyl, 4-piperidinylmethyl, 3-(*N*,*N*-dimethylamino)propyl, 2-(1-methyl-pyrrolidin-2-yl)ethyl, 2-(4-pyridyl)ethyl, or 3-(pyrrolidin-1-yl)propyl.

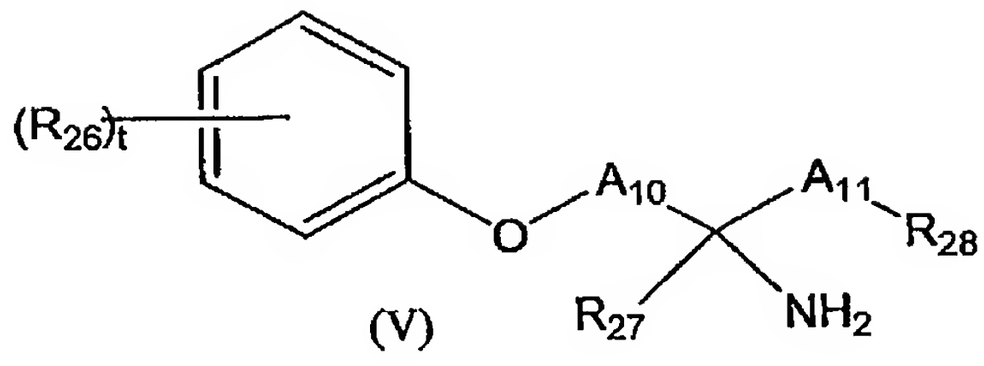
10. (original) The compound of claim 1 wherein R_2 is a group of the formula:



11. (original) The compound of claim 1 wherein X is a direct bond and R_3 is 3,5-dimethylpyrazol-1-yl, 2-phenylimidazol-1-yl, 2-ethylimidazol-1-yl, 1-benzimidazolyl, 4-(methoxycarbonyl)imidazol-1-yl, 4-methyl-2-ethylimidazol-1-yl, or 4-phenyl-1-imidazol-1-yl.

Claims 12-19 (canceled).

20. (currently amended) The compound of claim 1 which is a compound of formula (V):



(V)

wherein:

A_{10} and A_{11} are each independently alkylene or substituted alkylene;

each R_{26} is independently halo, alkyl, substituted alkyl, aryl, heteroaryl, cycloalkyl, substituted cycloalkyl, heterocycle, alkoxy, substituted alkoxy, cycloalkoxy, substituted cycloalkoxy, trifluoromethyl, cyano, nitro, hydroxy, NR_4R_5, or CO_2R_6;

R_{27} is hydrogen, alkyl, or substituted alkyl;

R_{28} is an N-linked heteroaryl or an N-linked heterocycle;

t is 0, 1, 2, 3, 4, or 5; and

R_4-R_6 are each independently hydrogen, alkyl, or substituted alkyl;

~~wherein any aryl of A_{10}, A_{11}, R_{26}-R_{28} and R_4-R_6 can optionally be substituted with from 1 to 5 substituents R_g; wherein each R_g is independently selected from the group consisting of hydroxy, alkyl, substituted alkyl, alkoxy, cycloalkoxy, substituted cycloalkoxy, methanediol, ethanediol, cycloalkyl, substituted alkyl, substituted alkoxy, substituted cycloalkyl, amino, substituted amino, aryl, aryloxy, carboxy, carboxylalkyl, carboxyl(substituted alkyl), cyano, halo, nitro, heteroaryl, heteroaryloxy, heterocyclic, heterocyclooxy, heteroaryl and trihalomethyl;~~

and wherein any heteroaryl of R_{28} ~~A_{10}, A_{11}, R_{26}-R_{28} and R_4-R_6~~ can be optionally substituted with 1 to 5 substituents R_h, wherein each R_h is independently selected from the group consisting of hydroxy, alkyl, alkoxy, substituted alkoxy, cycloalkoxy, substituted cycloalkoxy, substituted alkyl, arylalkyl, heteroarylalkyl, heterocyclealkyl, substituted cycloalkyl, amino, substituted amino, aryl, aryloxy, carboxyl, carboxylalkyl, carboxyl(substituted alkyl), cyano, halo, nitro, heterocyclic, and trihalomethyl [.] ;

or a pharmaceutically acceptable salt thereof.

21. (original) The compound of claim 20 wherein A_{10} is methylene and A_{11} is methylene.

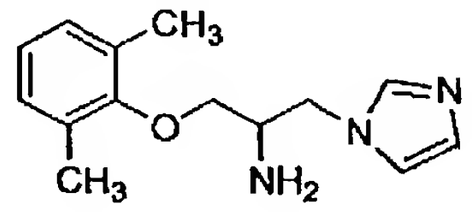
22. (original) The compound of claim 20 wherein R_{27} is hydrogen or methyl.

23. (original) The compound of claim 20 wherein R_{28} is 3,5-dimethylpyrazol-1-yl, 2-phenylimidazol-1-yl, 2-ethylimidazol-1-yl, 1-benzimidazolyl, 4-(methoxycarbonyl)-imidazol-1-yl, 4-methyl-2-ethylimidazol-1-yl, or 4-phenyl-1-imidazol-1-yl.

Claims 24-27 (canceled)

28. (previously amended) The compound of claim 1, which is a compound selected from the group consisting of:

(30)



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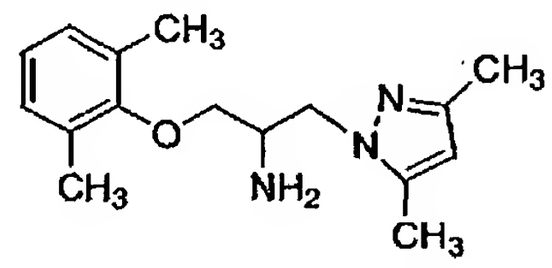

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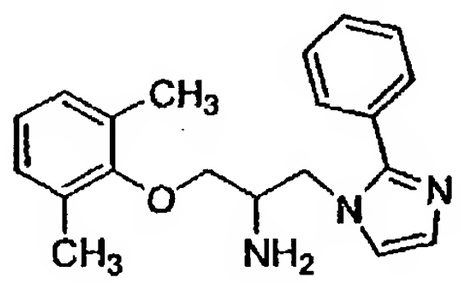

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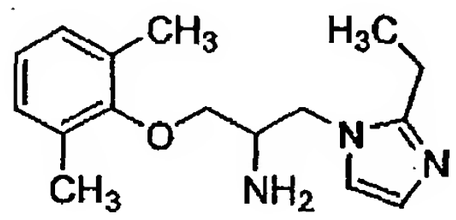

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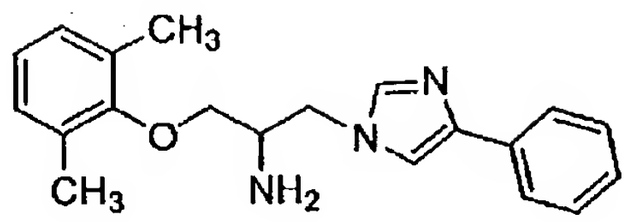

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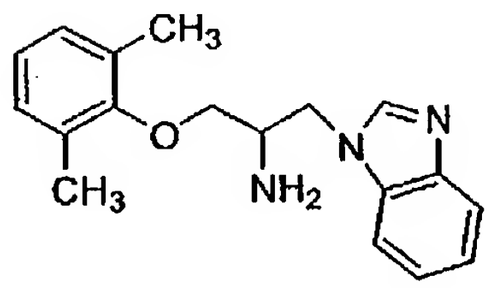

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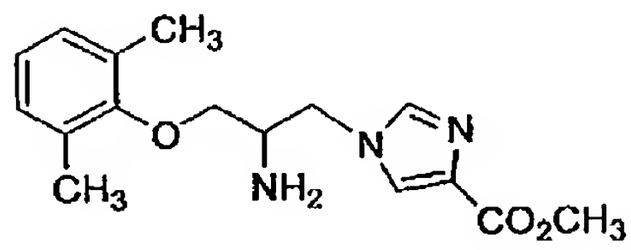

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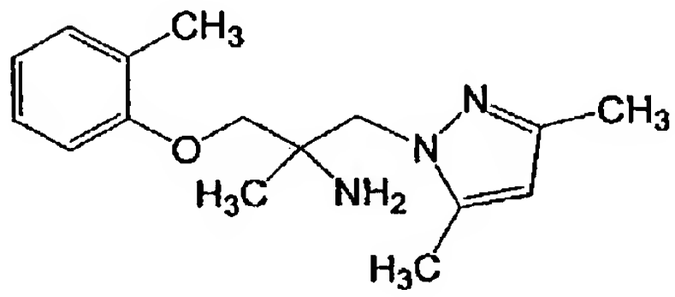

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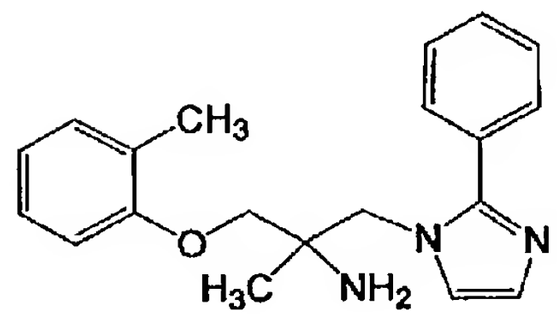
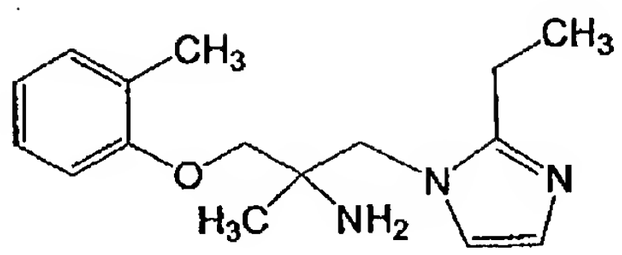
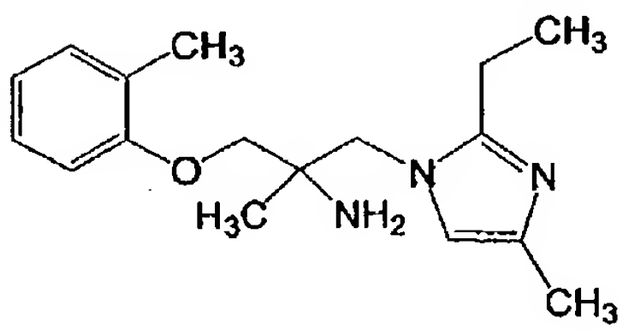
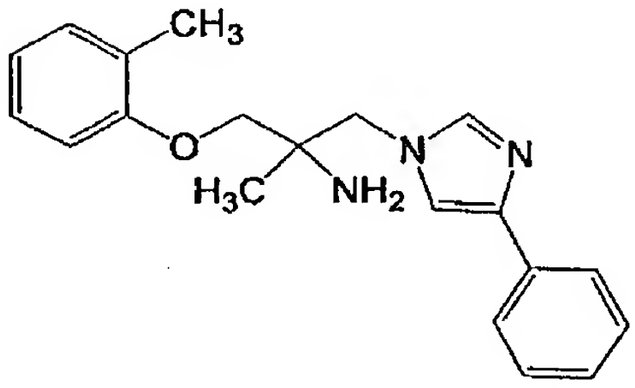
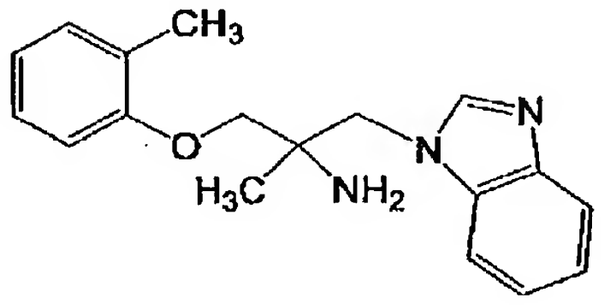
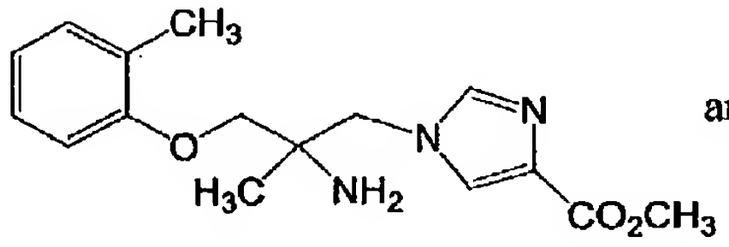


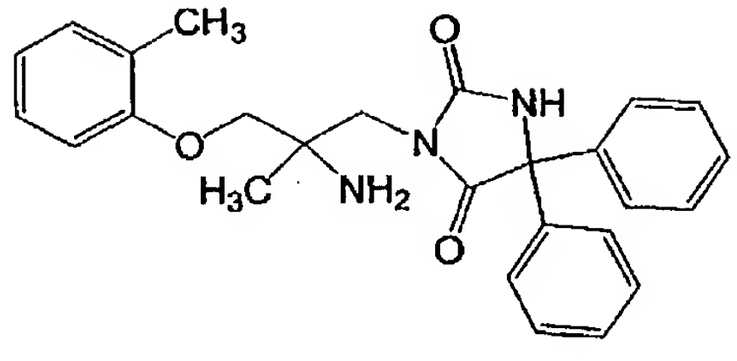
(49) 

(50) 

(51) 

(52) 

(53)  and

(92) 

or a pharmaceutically acceptable salt thereof.

29. (original) A pharmaceutical composition comprising a compound as described in claim 1; and a pharmaceutically acceptable carrier.

30. (original) A method of treating a disease or condition associated with sodium channel activity in a mammal, comprising administering to the mammal, a therapeutically effective amount of a compound as described in claim 1.

31. (original) The method of claim 30 wherein the disease or condition is neuropathic pain.

32. (original) A method of treating a disease or condition associated with sodium channel activity in a mammal, comprising administering to the mammal, a therapeutically effective amount of a pharmaceutical composition of claim 29.

33. (original) The method of claim 32 wherein the disease or condition is neuropathic pain.

REMARKS

1. Status of the Claims

Claim 20 has been amended. Upon entry of the above amendment, Claims 1-11, 20-23 and 28-33 will be pending for examination.

2. Amendments to the Claims

Claim 20 has been amended to more clearly delineate the optional substitution of R_{28}. The punctuation has been amended to replace an inappropriate period with a semicolon. Support for this amendment can be found, for example, in original Claim 1.

3. Restriction Requirement

In the restriction requirement mailed May 5, 2004, the Examiner has required restriction to one of the following groups of claims:

I. Claims 1-11, 28 and 29 drawn to a compound and composition classified in classes 544, 546, 548, and 514.
II. Claims 20-23 drawn to a compound of formula (V) and classified in class 548.
III. Claims 30-33 drawn to a method of treating a disease classified in class 514.

In response to the restriction requirement, Applicants elect to prosecute Group I, drawn to Claims 1-11, 28 and 29, with traverse.

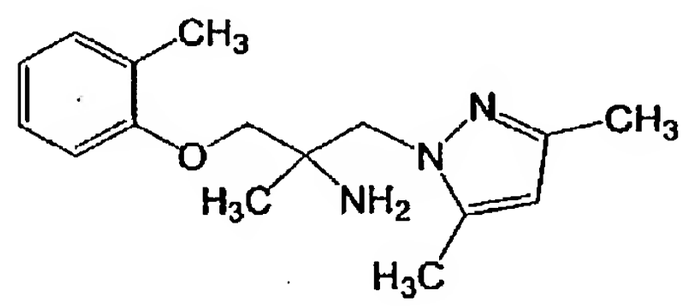
Applicants submit that Claims 20-23 (classified as Group II) fall within the scope of Claim 1 (classified as Group I). Specifically, formula (V) of Claim 20 is a subset of formula (I) wherein R_1 is limited to phenyl, R_2 is a group of formula (II) wherein *n* is limited to 0 and R_8 takes the value of NH_2. Therefore, searching the invention of a combined Group I-II as a whole would not be an undue burden on the Examiner.

Further, as noted on page 7 of the Restriction Requirement, with respect to the restriction between Groups I-II and Group III, , in accordance with MPEP §821.04 and *In re Ochaiai* (71F.3d 1565, 37 USPQ 1127 (Fed. Cir. 1995), method of use claims commensurate in scope with allowed product claims will be rejoined to the application upon the finding of allowability of product claims.

For at least the reasons described herein, Applicants respectfully request that the Restriction Requirement be withdrawn.

In response to the election of species requirement, Applicants elect Compound (47), shown below, which is depicted on page 18, the synthesis of which is described in Example 46 on pages 73-4. Claims 1-7, 10-11, 28 and 29 read on the elected species. (In addition, Claims 20-23 of Election Group II also read on elected Compound (47)).

(47)



The exact definition of each substitution on the base molecule of formulae (I) and (II) shown in Claim 1 (and Claim 20) is as follows:

Claim 1	Claim 20
R_1 is 2-methylphenyl;	t is 1, R_{26} is methyl,
A_1 and A_2 are methylene;	A_{10} and A_{11} are methylene;
R_7 is methyl;	R_{27} is methyl;
n is 0;	
R_8 is $NR_{10}R_{11}$, wherein R_{10} and R_{11} are each hydrogen;	
X is a direct bond; and	
R_3 is 3,5-dimethylpyrazol-1-yl.	R_{28} is 3,5-dimethylpyrazol-1-yl.

Should the Examiner wish to discuss any aspect of the present application at any time, the Examiner is invited to telephone the undersigned Agent for Applicants at (650) 808-6144.

Respectfully submitted,

Date: May 25, 2004

Joyce Cohen

Joyce Cohen, Reg. No. 44,622

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